ABSTRACT OF THE INVENTION

The present invention discloses that DARPP-32 is substrate for the cyclin dependent kinase Cdk5. The phosphorylation takes place at a specific threonine residue of DARPP-32 (Threonine 75). The Cdk5 catalyzed phosphorylation of DARPP-32 converts this protein into an inhibitor of the cAMP dependent protein kinase (PKA) and furthermore prevents it from being converted to an inhibitor of protein phosphatase 1 (PP1). Methods of identifying agents that modulate the phosphorylation of DARPP-32 by Cdk5 are disclosed. Methods of treating dopamine dysfunction in animal subjects are also provided.

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